

REMARKS

Reconsideration of this application is respectfully requested.

The examiner rejected claims 1-20 under 35 USC §103(a) based on U.S. patent 5,038,910 to Lassiter et al combined with U.S. patent 6,384,421 to Gochar and U.S. patent 2,226,750 to Traylor.

Claim 1 has been amended and requires,

“...providing...article transport containers...to move successively in spaced relationship...along all points of a predetermined transport path with...controlled rotation...identifying each article...placing...identified articles one by one in respective transport containers, providing television camera inspection of the articles...establishing via the camera inspection that just one article is...in a...transport container, designating a delivery location for... a contained article...causing the...article...to be discharged from its...container...by rotating the...container...in one direction beyond the point of article discharge, to the normal container position without contacting any other container...to enable...discharge of the article from the container opening...under...gravity.”

Applicants' claim 1 thus requires a method for transporting individual articles wherein each article is placed in a respective transport container, the article is identified, and inspected by a camera to establish that just one article is in a container. The claim further requires that a delivery location for discharge of the article be established and that the article is discharged from its container at the delivery location by rotating the container in one direction beyond the point of article discharge, to its normal container position, without contacting any other container, to enable discharge of the article from the container opening under gravity.

Applicants' invention as claimed in claim 1 differs from *Lassiter et al* in the following respects, among others,

- 1) Applicants' claim 1 requires that the article transport containers move successively in spaced relationship along all points of a predetermined transport path.

Lassiter et al requires product receiving buckets 44 to overlap one another when product is being fed into the buckets. The buckets 44 also overlap each other when they move over the discharge stations P and P'. *Lassiter et al* requires such overlap because each bucket receives an aggregate of loose articles or products 60 such as crackers or other relatively small bakery products. Each bucket 44 transports an unpackaged aggregate of loose product. The buckets have edges with oppositely disposed lips 94, 96 that overlap when the loose articles are fed into the buckets (Fig. 1), and when the buckets move along a horizontal path over the discharge stations P and P' (Fig. 1). Thus *Lassiter et al* does not show or suggest containers in spaced relationship along all points of a transport path.

- 2) Applicants' claim 1 requires that each article be identified as to its type of material.

Lassiter et al does not provide any means for identifying the nature of the aggregate that is deposited into the respective buckets. *Lassiter et al* shows a photo detector 51 that detects the reflection of light from the loose products 60 (col. 1 lines 28-30) to detect the presence of product in the bucket. However the *Lassiter et al* photo detector 51 does not identify the type of product in the bucket, but only that there is something in the bucket. Thus the photo detector is

not capable of discriminating or distinguishing between different materials in the buckets 44.

- 3) Applicants' claim 1 requires that the identified articles be placed one by one in a respective transport container.

Lassiter et al deposits an aggregate of loose articles or products 60 into the buckets 44. Thus each bucket contains more than one article. *Lassiter et al* does not deal with the problem of identifying a single article and placing a single article, one by one, in a respective transport container.

- 4) Applicants' claim 1 requires that a camera inspection establish that just one article is placed in a transport container.

Lassiter et al does not deal with the problem of placing one article in a container since *Lassiter et al* deposits an aggregate of loose articles or products in a collection bucket. The *Lassiter et al* photo detector 51 detects the presence of product but does not determine the numerical quantity of articles in the bucket. Thus *Lassiter et al* does not provide any kind of inspection to establish that just one article is placed in a bucket.

- 5) Applicants' claim 1 requires that the contained article be discharged from its container by rotating the container in one direction beyond the point of article discharge, to the normal container position without contacting any other container, to enable discharge of the contained article by gravity.

Lassiter et al requires, as shown in Fig. 9, that the buckets 44 be pivoted 90° in a first direction from a normal horizontal position to discharge the bucket contents. The bucket is then rotated 90° in a reverse

direction to restore the bucket to its normal horizontal position (col. 8, lines 36-62).

Lassiter et al cannot rotate the bucket in one direction beyond the point of article discharge to its normal horizontal position because the overlapping lips 94, 96 of the rotating bucket would interfere with corresponding lips 94, 96 of adjacent buckets.

The distinctions between applicants' invention as claimed in claim 1, and Lassiter et al as previously discussed, among others, are attributable to the fact that Lassiter et al and applicants' deal with entirely different problems and their respective solutions to such problems are entirely different.

Lassiter et al discloses transporting multiple quantities of products that have been processed, to buckets. There is no suggestion in Lassiter et al that the articles or products are identified as to type, size, weight, material or shape. There is simply a sensing of the aggregate volume of the products that enter a bucket

Thus Lassiter et al does not disclose a device for transporting individual articles of different type, size, weight, material or shape, one-by one to a designated delivery location among a plurality of delivery locations. There is no presence in Lassiter et al of a camera to inspect and ensure that just one article is placed or present in a respective dedicated container, as required by applicants.

Applicants respectfully submit that the above noted differences between applicants' claim 1 and Lassiter et al are not obviously satisfied by Gochar and Traylor.

Gochar shows an inspection system for detecting defects in plastic molded caps 12. The caps 12 slide downwardly on an inclined inspection ramp 36 where they are individually inspected by a camera.

Rejected caps are pushed off the ramp and acceptable caps continue to move downwardly onto a discharge conveyor.

Traylor shows a wheel shaped classifier device having radially spaced pivotal drag blades 13 that are used to scoop pulp mixture from a tank for discharge through a spout 6 of the tank.

It is respectfully submitted that Gochar and Traylor when considered in combination with Lassiter et al are useless or unworkable in Lassiter et al and thus do not provide any teachings that are obviously combinable with Lassiter et al.

It is further submitted that the combination of Lassiter et al, Gochar and Traylor do not show or suggest the requirements of applicants' claim 1, especially the distinctions between applicants' claim 1 and Lassiter et al as previously discussed at items 1-5. Accordingly it is submitted that claim 1 is allowable over the combination of Lassiter et al, Gochar and Traylor and any other patents cited herein. Allowance of claim 1 is thus respectfully requested.

Claims 2 and 5-10 which directly or indirectly depend on claim 1 are likewise submitted as allowable for the reasons supporting allowance of claim 1 as well as the distinctions defined in claims 2 and 5-10.

Allowance of claims 2 and 5-10 is thus respectfully requested.

Independent Claim 3 has been amended and requires,

“...providing...article transport containers...to move successively in spaced relationship...along all points of a predetermined transport path with...controlled rotation...identifying each article...placing the identified articles one by one in respective transport containers, designating a delivery location for...contained article...discharging the...article...by rotating the container in one direction through an angle of

360° ...without contacting any other container...to discharge the...article from the container opening under...gravity."

Applicants' claim 3, which is of a different scope than claim 1, requires a method of transporting individual articles wherein each article is placed in a respective transport container, the article is identified, and placed one by one in a respective transport container. The method further requires that a delivery location for discharge of the article be established and that the article is discharged from its container by rotating the container 360° to enable discharge of the article from the container opening under gravity.

Applicants' invention as claimed in claim 3 differs from Lassiter et al in the following respects, among others,

- 1) Applicants' claim 3 requires that the article transport containers move successively in spaced relationship along all points of a predetermined transport path.

Lassiter et al requires product receiving buckets 44 to overlap one another when product is being fed into the buckets. The buckets 44 also overlap each other when they move over the discharge stations P and P'. Lassiter et al requires such overlap because each bucket receives an aggregate of loose articles or products 60 such as crackers or other relatively small bakery products. Each bucket 44 transports an unpackaged aggregate of loose product. The buckets have edges with oppositely disposed lips 94, 96 that overlap when the loose articles are fed into the buckets (Fig. 1), and when the buckets move along a horizontal path over the discharge stations P and P' (Fig. 1). Thus Lassiter et al does not show or suggest containers in spaced relationship along all points of a transport path.

- 2) Applicants' claim 3 requires that each article be identified as to its type of material.

Lassiter et al does not provide any means for identifying the nature of the aggregate that is deposited into the respective buckets. *Lassiter et al* shows a photo detector 51 that detects the reflection of light from the loose products 60 (col. 1 lines 28-30) to detect the presence of product in the bucket.

However the *Lassiter et al* photo detector 51 does not identify the type of product in the bucket, but only that there is something in the bucket. Thus the photo detector is not capable of discriminating or distinguishing between different materials in the buckets 44.

- 3) Applicants' claim 3 requires that the identified articles be placed one by one in a respective transport container.

Lassiter et al deposits an aggregate of loose articles or products 60 into the buckets 44. Thus each bucket contains more than one article. *Lassiter et al* does not deal with the problem of identifying a single article and placing a single article, one by one, in a respective transport container.

- 4) Applicants' claim 3 requires that the contained article be discharged from its container by rotating the container in one direction through an angle of 360° without contacting any other container, to enable discharge of the contained article by gravity.

Lassiter et al requires, as shown in Fig. 9, that the buckets 44 be pivoted 90° in a first direction from a normal horizontal position to discharge the bucket contents. The bucket is then rotated 90° in a reverse direction to restore the bucket to its normal horizontal position (col. 8, lines 36-62).

Lassiter et al cannot rotate the bucket in one direction beyond the point of article discharge to its normal horizontal position because the overlapping lips 94, 96 of the rotating bucket would interfere with corresponding lips 94, 96 of adjacent buckets.

Based on applicants' previous discussion of the distinctions between applicants' invention as claimed in claim 1, which are likewise applicable to claim 3, it is submitted that the combination of Lassiter et al, Gochar and Traylor do not show or suggest the requirements of applicants claim 3 for reasons previously discussed at items 1-4. Accordingly it submitted that claim 3 is allowable over the combination of Lassiter et al, Gochar and Traylor, and any other patents cited herein. Allowance of claim 3 is thus respectfully requested.

Independent Claim 4 has been amended and requires,

“...providing article transport containers...to move successively in spaced relationship...along all points of a predetermined transport path with...controlled rotation...identifying each article, placing identified articles one by one in respective transport containers, designating a delivery location for...a contained article...discharging the...article...by rotating the container in one direction through an angle of 360° ...without contacting any other container...to discharge...article from the container opening under...gravity, controlling...rotation of...container by providing...guide pins...a...guide flap...and a...toothed engaging element...engaging...one of the guide pins with the...guide flap and causing further controlled rotation...by engaging...further guide pin...with...toothed engaging element...”

Applicants' claim 4 thus requires a method for transporting individual articles wherein each article is placed in a respective transport container, the article is identified, and a delivery location for discharge of the article is established. The method further requires that the article is discharged from its container at the delivery location by rotating the container 360° in one direction without contacting any other container, to enable discharge of the article from the container opening under gravity. The method also requires that the rotation of the container be controlled via guide pins, a guide flap and a toothed engaging element that sequentially interengageable in the manner defined in the claim.

Applicants' invention as claimed in claim 4 differs from Lassiter et al in the manner previously discussed with respect to claim 3 and in addition, in the following respects, among others,

- 1) Applicants' claim 4 requires controlled rotation of the container by selective engagement between guide pins, a guide flap and a toothed engaging element at the delivery location.

Lassiter et al shows an entirely different system for causing the buckets 44 to rotate 90° in one direction and reverse rotate 90° back to the normal horizontal position of the buckets 44.

It is submitted that the combination of Lassiter et al, Gochar and Traylor do not show or suggest the requirements of applicants' claim 4 for reasons previously discussed in connection with claims 1 and 3 and for the further reason discussed above at item 1. Accordingly it is submitted that claim 4 is allowable over the combination of Lassiter et al, Gochar and Traylor, and any other patents cited herein. Allowance of claim 4 is thus respectfully requested.

Independent claim 11 has been amended and requires,

“...article transport containers...to move successively in spaced...relation...along all points of the transport path...past...delivery locations, means for placing articles, one by one , in...transport containers,...means...for identifying each article...television camera...to establish that just one article is...in a...transport container...actuating means for causing removal of an article from its container,...having one...activated position to cooperate with... transport container...to cause removal of...article from...container at its designated delivery location...actuating means having...an inactive position to...allow container to pass...delivery location...without causing removal of article from container...”

Applicants' claim 11 thus requires a device for transporting articles wherein each article is placed in a respective transport container, the article is identified, and a camera establishes that just one article is in a transport container. Claim 11 further requires actuating means having one position for causing removal of an article from its container at its designated delivery location and another position that allows the container to pass an undesignated delivery location without causing removal of the article from the container.

Applicants' invention, as claimed in claim 11, differs from Lassiter et al., in the following respects, among others,

- 1) Applicants' claim 11 requires article transport containers that move successively in spaced relationship along all points of a predetermined transport path.

Lassiter et al requires product receiving buckets 44 to overlap one another when product is being fed into the buckets. The buckets 44 also overlap each other when they move over the discharge stations P and

P'. *Lassiter et al* requires such overlap because each bucket receives an aggregate of loose articles or products 60 such as crackers or other relatively small bakery products. Each bucket 44 transports an unpackaged aggregate of loose product. The buckets have edges with oppositely disposed lips 94, 96 that overlap when the loose articles are fed into the buckets (Fig. 1), and when the buckets move along a horizontal path over the discharge stations P and P' (Fig. 1). Thus *Lassiter et al* does not show or suggest containers in spaced relationship along all points of a transport path.

- 2) Applicants' claim 11 requires means for identifying each article as to its type of material.

Lassiter et al does not provide any means for identifying the nature of the aggregate that is deposited into the respective buckets.

Lassiter et al shows a photo detector 51 that detects the reflection of light from the loose products 60 (col. 1 lines 28-30) to detect the presence of product in the bucket. However the *Lassiter et al* photo detector 51 does not identify the type of product in the bucket, but only that there is something in the bucket. Thus the photo detector is not capable of discriminating or distinguishing between different materials in the buckets 44.

- 3) Applicants' claim 11 requires means for placing identified articles one by one in a respective transport container.

Lassiter et al deposits an aggregate of loose articles or products 60 into the buckets 44. Thus each bucket contains more than one article. *Lassiter et al* does not deal with the problem of identifying a single article and placing a single article, one by one, in a respective transport container.

4) Applicants' claim 11 requires that a camera inspection establish that just one article is placed in a transport container.

Lassiter et al does not deal with the problem of placing one article in a container since Lassiter et al deposits an aggregate of loose articles or products in a collection bucket. The Lassiter et al photo detector 51 detects the presence of product but does not determine the numerical quantity of articles in the bucket. Thus Lassiter et al does not provide any kind of inspection to establish that just one article is placed in a bucket.

5) Applicants' claim 11 requires actuating means for removal of an article from its container at a designated delivery location. The actuating means has two positions that enable it to be discriminatory. Thus if a container is not at its designated delivery location the container will pass the delivery location without removal of the article from the container.

Lassiter et al does not show a means for identifying an article which provides basis for determining where an article is to be delivered and for assigning a designated delivery station. Thus Lassiter et al is not capable of receiving information which will enable the buckets 44 to deliver or bypass a particular delivery location, as claimed by applicants.

The distinction between applicants' invention as claimed in claim 11 and Lassiter et al as previously discussed, among others are attributable to the fact that Lassiter et al and applicants deal with entirely different problems, and their respective solutions to such problems are entirely different.

For reasons discussed above, and for reasons previously discussed in connection with claim 1, applicants submit that Gochar and Traylor when considered in combination with Lassiter et al are useless or unworkable in Lassiter et al and thus do not provide any teachings that are obviously combinable with Lassiter et al to show or suggest the requirements of applicants' claim 11. Accordingly it is submitted that claim 11 is allowable over the combination of Lassiter et al, Gochar and Traylor and any other patents cited herein. Allowance of claim 11 is thus respectfully requested.

Claims 12, 15, 16, 17, 18, 19 and 20 which directly or indirectly depend on claim 11 are likewise submitted as allowable for the reasons supporting allowance of claim 11 as well as the distinctions defined therein. Allowance of claims 12, 15, 16, 17, 18, 19 and 20 is thus respectfully requested.

Independent claim 13 has been amended and requires,

“...article transport containers...to move successively in spaced...relation...along all points of the transport path...past...delivery locations, means for placing articles, one by one in...transport containers, means...for identifying each article...actuating means for discharging...article...from its...container... causing...container to rotate in one direction through an angle of 360°...without contacting any other container...to discharge the single article from the container opening under...gravity.”

Applicants' claim 13, which is of a different scope than claim 11, requires a device for transporting individual articles wherein each article is placed in a respective transport container, the article is identified, and placed one by one in a respective transport container. The claim further requires actuating means for discharge of the article. The actuating means

cause the container to rotate 360° to enable discharge of the article from the container opening under gravity.

Applicants' invention as claimed in claim 13 differs from *Lassiter et al* in the following respects, among others,

- 1) Applicants' claim 13 requires article transport containers that move successively in spaced relationship along all points of a predetermined transport path.

Lassiter et al requires product receiving buckets 44 to overlap one another when product is being fed into the buckets. The buckets 44 also overlap each other when they move over the discharge stations P and P'. *Lassiter et al* requires such overlap because each bucket receives an aggregate of loose articles or products 60 such as crackers or other relatively small bakery products. Each bucket 44 transports an unpackaged aggregate of loose product. The buckets have edges with oppositely disposed lips 94, 96 that overlap when the loose articles are fed into the buckets (Fig. 1), and when the buckets move along a horizontal path over the discharge stations P and P' (Fig. 1). Thus *Lassiter et al* does not show or suggest containers in spaced relationship along all points of a transport path

- 2) Applicants' claim 13 requires means for identifying each article as to its type of material.

Lassiter et al does not provide any means for identifying the nature of the aggregate that is deposited into the respective buckets. *Lassiter et al* shows a photo detector 51 that detects the reflection of light from the loose products 60 (col. 1 lines 28-30) to detect the presence of product in the bucket. However the *Lassiter et al* photo detector 51 does not

identify the type of product in the bucket, but only that there is something in the bucket. Thus the photo detector is not capable of discriminating or distinguishing between different materials in the buckets 44.

- 3) Applicants' claim 13 requires means for placing articles one by one in a respective transport container.

Lassiter et al deposits an aggregate of loose articles or products 60 into the buckets 44. Thus each bucket contains more than one article. *Lassiter et al* does not deal with the problem of identifying a single article and placing a single article, one by one, in a respective transport container.

- 4) Applicants' claim 13 requires means for discharging a contained article by rotating the container in one direction through an angle of 360° without contacting any other container, to enable discharge of the contained article by gravity.

Lassiter et al requires, as shown in Fig. 9, that the buckets 44 be pivoted 90° in a first direction from a normal horizontal position to discharge the bucket contents. The bucket is then rotated 90° in a reverse direction to restore the bucket to its normal horizontal position (col. 8, lines 36-62).

Lassiter et al cannot rotate the bucket in one direction beyond the point of article discharge to its normal horizontal position because the overlapping lips 94, 96 of the rotating bucket would interfere with corresponding lips 94, 96 of adjacent buckets.

Based on applicants' previous discussion in connection with claim 3, which is likewise applicable to claim 13, it is submitted that the combination of *Lassiter et al*, *Gochar* and *Traylor* do not show or suggest the requirements of applicants claim 13 for reasons discussed above at items 1-4. Accordingly it submitted that claim 13 is allowable over the combination of *Lassiter et al*, *Gochar* and *Traylor*, and any other patents cited herein. Allowance of claim 13 is thus respectfully requested.

Independent claim 14 has been amended and requires,

“...article transport containers...to move successively in spaced...relation...along all points of the transport path...past...delivery locations, means for placing articles one by one, in...transport containers...means...for identifying each article...actuating means for causing discharge of...article...from its...container...by rotating the container in one direction through an angle of 360°...without contacting any other container...to discharge...article from container opening under...gravity...actuating means further including...guide pins...a movable guide flap...and a...toothed engaging element...for controlling...rotation of...container...one of the guide pins...engageable with...guide flap...to cause an initial turning of...container, and...one additional guide pin...to co-operate with...toothed engaging element...to effect further...rotation of...container.”

Applicants' claim 14, which is also of a different scope than claim 11 requires a device for transporting individual articles wherein each article is placed in a respective transport container and the article is identified. Claim 14 further requires means for discharging the article from its container by rotating the container 360° in one direction without contacting any other container, to enable discharge of the article from the container opening under gravity. Claim 14 also requires actuating means

including guide pins, a guide flap and a toothed engaging element to effect rotation of the container.

Applicants' invention as claimed in claim 14 differs from *Lassiter et al* in the manner previously discussed with respect to claim 13 and in addition, in the following respects, among others,

- 1) Applicants' claim 14 requires means for effecting rotation of the container by selective engagement between guide pins, a guide flap and a toothed engaging element at the delivery location.

Lassiter et al shows an entirely different system for causing the buckets 44 to rotate 90° in one direction and reverse rotate 90° back to the normal horizontal position of the buckets 44.

Based on applicants previous discussion in connection with claim 3, which is equally applicable to claim 14, and for the additional reason discussed above at item 1, it is submitted that the combination of *Lassiter et al*, *Gochar* and *Traylor* do not show or suggest the requirements of applicants' claim 14. Accordingly it is submitted that claim 14 is allowable over the combination of *Lassiter et al*, *Gochar* and *Traylor*, and any other patents cited herein. Allowance of claim 14 is thus respectfully requested.

In view of the foregoing remarks and amendments it is submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

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